



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/511,790

06/17/2005

Thomas Reid Kelly

D-3173

6291

33197

7590

02/19/2009

STOUT, UXA, BUYAN & MULLINS LLP
4 VENTURE, SUITE 300
IRVINE, CA 92618

EXAMINER

CHAWLA, JYOTI

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

02/19/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/511,790	Applicant(s) KELLY ET AL.	
	Examiner JYOTI CHAWLA	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/4/2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/04/2008 has been entered. Claims 26 and 48 have been amended. Claims 26-49 are pending and examined in the current application.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 46 and 47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 46 recites the limitation: "a product of claim 41" in line 3. There is insufficient antecedent basis for this limitation in the claim. Claim 46 is an improper dependent claim. Claim 41 is drawn to a process and claim 46 is improperly drawn to a product.

Claim 47 recites the phrase "a product of claim 41" in lines 1 and 2. There is insufficient antecedent basis for this limitation in the claim. Claim 47 is an improper dependent claim. Claim 41 is drawn to a process and claim 46 is improperly drawn to a product.

Claim Rejections - 35 USC § 103

Art Unit: 1794

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

(A) Claims 26-28, 33-39, 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood (US 3892870).

Regarding claim 26, Wood teaches of an artificial fruit and the process of making the same by forming an alginate gel or low-methoxy pectate gel (Abstract). The food product is made by the process of mixing a solution of alginate or low-methoxy pectate sol (i.e., dispersion) with a solution of calcium salt and acid (Column 2, line 22-Column 3, line 25) as recited in claims 26, steps 1 and 2. The solution of calcium salt may be mixed with the alginate or low-methoxy pectate sol at the same time or may be released

in a controlled manner in order to avoid rapid gelling. (Column 2, line 56 to Column 3, line 14). Wood further teaches that gelation of alginate sol takes place in the moulds (Column 3, lines 15-25), i.e., after the aqueous alginate sol or the aqueous low-methoxy pectate sol has left the in-line dynamic mixer, as recited in step 3 of claim 26. Wood teaches that the mixing is carried out in an in-line mixer, which is "suitable for both communication and dispersion" and "having a low volume and low residence time" (Column 3, lines 10-15), as instantly claimed. Regarding a continuous process, Wood teaches of making alginate gel using an in-line mixer having a low volume, which is suitable for both communication and dispersion of the gellable mixture and the moulds in which the gelation takes place. The moulds as taught by Wood may be continuous moulds passing on a conveyer system under the mixer outlet (Column 3, lines 15-25). Further, in Example 3, Wood teaches of a continuous in-line mixer beneath whose discharge outlet a moving belt was situated (Column 4, lines 41-44). Thus, Wood teaches of a continuous process as instantly claimed.

Specifically regarding the continuous production of alginate or low methoxy pectate sol, given that Wood contemplates an in-line process and continuous in-line mixer and continuous moulds passing on a conveyer system (Column 3, lines 10-25 and Column 4, example 3), it would have been obvious to one of ordinary skill at the time of the invention that the process as taught by Wood may be used to make the sol continuously as part of a continuous process, as instantly claimed.

Regarding claim 27, Wood teaches that aqueous alginate sol or the aqueous low-methoxy pectate sol is allowed to gel quiescently immediately after the aqueous alginate sol or the aqueous low-methoxy pectate sol has left the in-line dynamic mixer (Column 4, lines 60-65).

Regarding claims 28, 33-37, Wood teaches of addition of solution of calcium salt and acid having a di- or higher valent cations (i.e., generating free gelling ions) (Column 2, lines 22-56). Regarding the specific salt, Wood teaches that the salt used may be a calcium citrate or calcium tartrate (Column 2, lines 43-45) as claimed. Regarding the

Art Unit: 1794

solubility of the salt it is noted that said calcium salts are low solubility salts that are insoluble at neutral pH but soluble at acidic pH and have solubility between 0.02% and 0.3%, i.e., a low-solubility salt providing gelling ions (Applicant's disclosure Page 11, line 23-Page 12, line 15).

Regarding claims 38-39 and 42 Wood teaches that in order to create a fruit like product, fruit flavor, fruit pulp, fruit puree or Vitamin A (Beta-Carotene), i.e., biologically active compound may be included in the gel matrix (Column 2, lines 13-18).

Regarding claim 41, Wood teaches that the gel may be formed into a block, extruded into molds and/or cut into any desired shape after extrusion from the in-line mixer (Column 3, lines 15-25), as instantly claimed.

(B) Claims 48 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood.

Claims 26-28, 33-39, and 41-42 have been rejected for being anticipated by Wood, in the office action above.

As discussed above, Wood teaches of a process as recited in claim 26. Regarding the system as recited in claim 48, where the alginate dispersion is fed separately from the gelling ions in the mixer, Wood uses an in-line mixer to mix a dispersion of alginate or low methoxy pectate sol, water and calcium salts. Wood also teaches that calcium salt solution can be mixed with "an alginate or low-methoxy pectate sol simultaneously with or subsequent to the dispersion of gel particles in the sol" (Column 2, lines 59-62).

Wood also teaches that the calcium salts may be feed into the mixer at a controlled rate to avoid rapid gelling (Column 2, lines 60-65). The gelation is carefully controlled so that substantially none of the alginate or pectate sol comes in contact with the calcium ions until gelation is desired (Column 3, lines 3-7; and Example 3). Further regarding claim 49, Wood also states that the gel may be formed into rectangular molds and later cut into a desired shape (Column 3, lines 15-25), i.e., feed size portions.

Art Unit: 1794

Wood does not specifically state that the feeds are separate or spaced apart. Given Wood's continuous mixing process (Example 3), continuous molding (Column 3, lines 15-20 and example 3) and careful control of gelling ions within the in-line mixer (Column 2, lines 56-65), it would have been obvious at the time this invention was made for a person of ordinary skill in the art to have created an alginate or low methoxy pectate gel in an in-line mixing system with separate feeds for the alginate or low methoxy pectate spaced apart from the calcium gelling ion feeds. The resultant product may then be fed into molds and cut upon cooling as taught by Wood.

(C) Claims 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood, as applied to claim 26 above, in view of Cox et al. (US 5213829), hereinafter Cox.

Claims 26-28, 33-39, and 41-42 have been rejected for being anticipated by Wood, as discussed above.

Wood discloses an artificial fruit made by the process of combining a solution of alginate or low methoxy pectate with a calcium salt and an acid (Abstract and Column 2, line 22 to Column 3, line 25). Wood adds a variety of additional ingredients to the gel formulation (Example 3); however, Wood does not teach the addition of an anhydrous liquid dispersant, such as lecithin, in the aqueous solution. Cox teaches of making lower fat meat based products containing artificial edible adipose (Abstract and Column 6, lines 15-25). Cox also teaches of creating a gel out of any gelling agent, such as alginate, with the addition of a gelation-inducing agent, such as a calcium salt (Column 6, lines 38-45). Cox also teaches of adding edible oils and lecithin with the food product (Column 10, Example 1). The incorporation of lecithin with edible oil is applicants' preferred embodiment for a dispersant that will hold the materials in suspension for up to fifteen minutes (Application, Page 5, lines 1-23). The solution is edible and may be used on foods, such as meat products. Wood teaches a process of making a food gel from a solution of alginate or low methoxy pectate with a calcium salt and an acid and Cox discloses a gel that may be made from the same composition (Cox Column 6-7),

with addition of oil and lecithin (emulsifier) to make a stable low fat meat based food composition or emulsify the composition. Thus, gelling agents such as algin were known to be used in compositions comprising edible oils and lecithin (Cox). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Wood based on teaching of Cox and include edible oil and lecithin to algin or low methoxy pectin based composition at least for the purpose of modifying the calorific content and organoleptic properties of the edible composition.

(D) Claims 40 and 43-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood, as applied to claim 26 and 39 above, in view of Dugger et al. WO 98/47392 and Mann US 5,718,894.

Claims 26-28, 33-39, and 41-42 have been rejected for being anticipated by Wood, as discussed above.

Wood discloses a gel product that is continuously fed into an in-line mixer resulting in a calcium alginate gel matrix that may or may not be pasteurized and is cut immediately after cooling (Column 3, lines 15-34; Column 4, lines 42-67). Wood teaches an artificial fruit made by the process of combining a solution of alginate or low methoxy pectate with a calcium salt and an acid; however, Wood does not teach the addition of an anaerobic biologically active substance or the use of the claimed invention to feed livestock.

Dugger discloses an animal feed that contains animal nutritional materials, animal immune system stimulants, animal appetite stimulants, animal color enhancers, and animal therapeutic agents dispersed in a gel carrier matrix (Page 3, lines 18-28). The animal nutritional material may contain fat, protein or vitamins (Page 5, lines 1-2). Suitable gelling matrixing agents include algin, pectin, gelatin and bacterial gels (Page 8, lines 11-22). The animal feed may be prepared to have the shape, scent and taste of fruit in order to be used as a bird feed (Page 4, lines 22-24) and may be fed to birds (Page 3).

Mann discloses a formulation of microorganisms suitable for administration to an animal for therapeutic purposes (Column 1, lines 50-57). The formulation is administered with the feed (Column 3, lines 27-30). The bacteria used are all anaerobic bacteria, such as *Lactobacillus*, *Enterococcus Faecalis*, and *Bacillus licheniformis* (Column 4, lines 5-26).

Given Wood's gel product that is continuously feed into an in-line mixer resulting in a calcium alginate gel matrix that may or may not be pasteurized and is cut immediately after cooling and Dugger's method of incorporating nutritional materials within a gel carrier matrix, such as a bacteria gel, it would have been obvious to one of ordinary skill in the art at the time this invention was made to modify Wood and use Mann's anaerobic bacterial formulation as a animal therapeutic agent within a fast hardening gel matrix, such as Wood's at least for the purpose of providing direct or indirect source of bactericide (Mann Column 1, lines 43-47) to growing animals. Further, as taught by Dugger, the resulting nutritionally supplemented animal feed may be used to feed birds (Page 3) (i.e., chicks).

Response to Arguments

Applicant's arguments submitted 12/04/2008 with respect to claim 26-49 have been considered but are moot in view of new grounds of rejection.

Applicant's arguments directed to Wood for not teaching a continuous process as recited in independent claim 26 (Remarks, pages 8-11), have been addressed in the rejection above.

Applicant's arguments directed to Wood for not teaching a system comprising continuous process as recited in independent claim 26 (Remarks, pages 12-), have also been addressed in the rejection above.

Applicant's argument that Wood does not disclose "A system comprising a dynamic in-line mixer to perform the combination of the steps of continuously forming the sol and generating the free gelling ions, as in the present system claims 48 and 49" has been considered. Applicant also states the process as claimed differs from Wood in making the sol continuously, which according to applicant's own admission "the sol is made more quickly" by using the continuous mixer (Remarks, page 14, paragraph 2). In

Art Unit: 1794

response applicant is reminded that a recitation of the method of making the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. Further, applicant is directed to *In re Dilnot*, 319 F.2d 188, 138 USPQ 248 (CCPA 1963) where claim was directed to a method of making where the claim differed from the prior art only in requiring certain step to be performed continuously, the court held the claimed continuous operation would have been obvious in light of the batch process of the prior art. Thus, continuous production of sol for increasing the speed of making sol would have been obvious over Wood absent any clear and convincing evidence and/or arguments to the contrary.

In response to applicant's argument that "Wood teaches away from applicant's process and system by teaching by disclosing pre-preparing and batch-producing a sol (Remarks, page 16, paragraph 2), it is noted that Wood teaches a similar process of making alginate sols where the process can be made continuous after the sol is made (Columns 3 - 4, and Example 3). Thus, teaching an alternate method of performing one step (alginate sol making) in a process that can be made continuous as disclosed by Wood, does not mean that Wood teaches against the invention as a whole. Making a process step continuous or discontinuous in a system, does not lend patentable distinction to the claims, absent any clear and convincing evidence and/or arguments to the contrary.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JYOTI CHAWLA whose telephone number is (571)272-8212. The examiner can normally be reached on 9:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1794

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JC/
Examiner
Art Unit 1794

/JENNIFER MCNEIL/

Supervisory Patent Examiner, Art Unit 1794